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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,662	08/11/2003	Yoshiaki Asao	241433US2S	3510

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EXAMINER

NGUYEN, THINH T

ART UNIT PAPER NUMBER

2818

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/637,662

Applicant(s)

ASAO, YOSHIAKI

Examiner

Thinh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 2, 3, 5, 6, 8, 9, 11, 12 and 14-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 7, 10, 13, 16, 19 and 22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1 This is in response to Applicant's Amendment filed 02/08/2005.

Note that the figures and reference numbers referred to in this Office Action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

2 Applicant's amendments to independent claim 1 have necessitated new grounds of rejection for claims 1, 4, 7, 10, 13, 16, 19, and 22. See MPEP § 706.07(a).

Claim Rejections - 35 USC § 102

3 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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4. Claims 1 is rejected under 35 U.S.C. §102(e) as being anticipated by Gogl. et al. (U.S. Patent 6,577,528).

REGARDING CLAIM 1

Golg et al disclose (the abstract, fig 1, fig 2,fig 3,column 1 lines 13-32) a semiconductor integrated circuit device comprising: a data line group including a plurality of data lines; a first bit line group including a plurality of bit lines; a first column gate circuit that electrically connects the first bit line group to the data line group according to a first column selection signal; a second bit line group including a plurality of bit lines; a second column gate circuit that electrically connects the second bit line group to the data line group according to a second column selection signal different from the first column selection signal; a plurality of word lines intersecting the plurality of bit lines included in the first and second bit line groups; and a plurality of memory cells including magneto-resistive elements and adapted to be electrically connected to a plurality of bit lines included in the first and second bit line groups and selected by the plurality of word lines, spinning directions of the magneto-resistive elements being perpendicular to the plurality of bit lines (column 1 lines 33-40) included in the first and second bit line groups as seen on a plan view wherein data is written to the plurality of memory cells by making a write electric current flow to the plurality of bit lines of the first or second bit line group. writing data being determined by a direction of the write electric current flowing to the plurality of bit lines of the first or second bit line group.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. §103(a), which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4,7, 10,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gogl et al. (US patent 6,577,528) in view of further remark.

REGARDING CLAIM 4,7

Gogl et al. disclose all the invention except for the pitch arrangement of the bit line group or the magneto-resistive elements.

These features, however, are considered obvious since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art.

REGARDING CLAIM 10, 13

Gogl et al. disclose all the invention except for the use of diode or transistor as switching element for the magnetic element.

This feature, however, is old and well known in the art as evidenced by the disclosure by Zhu (US patent 5,734,605) fig 6, fig 7.

A person skilled in the art at the time the invention was made would know how to use transistor or a diode as switching element for MRAM cells without any special teachings.

7. Claim 16, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gogl et al. (US patent 6,577,528) in view of Zhu. (US patent 5,734,605) and in further view of Shin et al. (US patent 6,848,169); these inventions all involves MRAM.

REGARDING CLAIM 16

Gogl et al. discloses all the invention except for a double tunneling structure and a fixing layer. Zhu, however, teaches a double junction tunneling structure (fig 1) and Shin teaches the use of a fixing layer (fig 1 layer 14)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combines the teachings of Gogl, Zhu and Shin in order to come up with the invention of claim 16 for a purpose of improving the MRAM device .

REGARDING CLAIM 22

Gogl et al. discloses all the invention except for a double tunneling structure and a fixing layer with a stack of ferromagnetic and non-magnetic layers. Zhu, however, teaches a double junction tunneling structure (fig 1) and Shin (fig 1 layer 14) teaches the use of a fixing layer with a stack of ferromagnetic and non-magnetic layers.

The rationale to combine the teachings of Gogl, Zhu and Shin in order to come up with the invention of claim 22 is the same as discussed in claim 16.

8. Claim 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gogl et al. (US patent 6,577,528) in view of Zhu (US patent 6,848,169).

REGARDING CLAIM 19

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Gogl et al. discloses all the invention except for a fixing layer with a stack of ferromagnetic and non-magnetic layers. Shin, however, (fig 1 layer 14) teaches the use of a fixing layer with a stack of ferromagnetic and non-magnetic layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combines the teachings of Gogl and Shin in order come up with the invention of claim 16 for a purpose of improving the MRAM device .

9. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 703-305-0421. The examiner can normally be reached on 8:30 am - 5:00 pm Monday to Friday..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID NELMS can be reached on (703) 308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Thinh T Nguyen

TTN

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David Nelms
Supervisory Patent Examiner
Technology Center 2800